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| **Subject / Course:** Mathematics | **TC Name:** Yana Ma | |
| **Grade Level:** 8 | **Date:** Oct 25, 2010 | |
| **Topic:** Histograms Review & Mean, Median and Mode | **Time of Class:** 75 minutes | |
| **AT Name:** Mary Miller | **Room # / Location:** 210 | |
| **1. Curriculum Expectation(s) and Goal(s) for the Lesson** | |  |
| 1. **Expectations**:  |  | | --- | | *Collection and Organization of Data*   1. Organize into intervals a set of data that is spread over a broad range   *Data Relationships*   1. Demonstrate an understanding of the appropriate uses of bar graphs and histograms by comparing their characteristics 2. Determine, through investigation, the appropriate measure of central tendency (i.e., mean, median, or mode) needed to compare sets of data (e.g., in hockey, compare heights or masses of players on defence with that of forwards); | | | |
| 1. **Goal(s) for the lesson:**  |  | | --- | | In the end of the lesson, students will be able to:   1. Demonstrate an understanding of the appropriate uses of bar graphs and histograms by comparing their characteristics 2. Accurately calculate the mean, median, and mode of groups of data and use the calculations to describe the data 3. Determine, through investigation, the appropriate measure of central tendency needed to compare sets of data | | | |
| **2. Pre-assessment and Accommodations/Modifications** | | |
| |  |  | | --- | --- | | **Pre-assessment:** | **Accommodation/Modification:** *(how will you adapt your lesson?)* | | **Academic Needs:**  **Behavioural/Social/Emotional Needs:**  **Physical Needs:**  **Diversity Needs:** | Give fewer and easier questions to students who have difficulty completing the work  -Allow students to work in pairs  -Be selective in the questions assigned to students who have difficulty  Ensure students who are easily distracted are asked to participate in activities  Stress the importance of cooperation-this is not a competition  Pair up ESL students with somebody who can help | | | |

1. **Learning Environment**

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| The Smart Board will be next to the teacher  The clickers are ready to use and connected to the laptop  Students will be required to clear their desk at the beginning of the lesson  Before group work students will be asked to form the table into 5 groups of 6 people  During group activities and seat work the teacher will circulate throughout the classroom.  All handouts and required materials will be ready at the teacher’s desk(to the right of the teacher) |

1. **The Overview (Agenda) for your lesson:**

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| 1. Minds on(8 minutes) 2. Homework checking and review (17 minutes) 3. Observation and experiment (36 minutes) 4. Reflecting (5 minutes) 5. Application (3 minutes) 6. Consolidation (6 minutes)   (Transitions in the middle) |

**5. Resources and Materials for your class**

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| 1. Smart board 2. Clicker set, make sure they work 3. Teacher’s laptop 4. Metre sticks 5. Pencils (students have their own pencils) 6. Grade 8 Math Textbook 7. Internet |

1. **Content, Teaching Strategies, for Lesson**

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| ***Time*** | ***Teaching or***  ***Assessment Strategy*** | ***Detailed Description*** |
| *8 min.* | *Introduction* | 1. **(before class) Preparation**  * Before the start of the lesson, the teacher will test clickers, connect the receiver to the laptop, and run the software on the laptop * Before the start of the lesson, the teacher will connect Smart Board, projector, laptop and run the software on the laptop with the presentation ready to display  1. **Transition (3 minute)**  * The teacher will get the class attention ( if you can hear me, clap once..., 1,2,3, all eyes on me) * The teacher will ask the students to clear their desks in 40 seconds * The teacher will show the topic of today on Smart Board * The teacher will get class attention(can I have your attention please) * The teacher will ask students to touch their name on the Smart Board and finish the attendance * At the same time, the teacher will hand out clickers to students and get ready for review questions * The teacher will give the attendance to the student on duty  1. **Minds On/Hook(5 minutes)**  * The teacher will display the Power Point presentation questions on the Smart Board and ask students to use clickers to choose the one that they prefer * The teacher will review the results from clickers with the class and discuss the choices |
| *17 min* | *Homework checking*  *Pair-checking*  *Review for mean, median, and mode* | 1. **Transition (1 minutes)**  * The teacher will ask students to take out the homework and do a partner check  1. **Homework Checking (10 minutes)**  * The teacher will ask students to show the solution for question 4 on the Smart Board * The teacher will ask students to show the solution for question 8 on the Smart Board  1. **Transition (1 minute)**  * The teacher will review another time the difference and similarity of bar graph and histogram * The teacher will introduce the topic for today: mean, median and mode (3M)  1. **Review (5 minutes)**  * The teacher will invite students to define mean, median and mode * The teacher will ask students to calculate the mean, median and mode for the following numbers:   2,4,8,9,12,15,18,20,22   * The teacher will introduce the purpose for mean, median and mode: comparing groups of data by comparing the mean, median & mode |
| *36 min* | *Instruction*  *Direct Instruction*  *Cooperative learning*  *Think-Pair-Share* | 1. **Observation (15 minutes)**  * The teacher will ask students to read textbook page 108 together * The teacher will invite two students to come forward and demonstrate the experiment with the result recording down into the table on the Smart Board * The teacher will calculate the mean, median and mode with students together  1. **Transition (1 minute)**  * The teacher will ask students to do the experiment with a partner  1. **Experiment (20 minutes)**  * The teacher will pair up the students * The teacher will explain the tasks to the class * The students need to calculate the mean, median and mode with the results * The students need to drop the least measurement and recalculate the mean, median and mode * The students need to drop the greatest measurement and recalculate the mean, median and mode * The students need to drop the least and the greatest measurement and recalculate the mean, median and mode |
| *5 min* | *Reflecting* | 1. **Think (5 minutes)**  * The teacher will ask students to think about how the mean, median and mode are related to a set of data and how changing some of the measurements affects the mean, median and mode by asking them three questions related to the experiment * Was the mean, the median, or the mode affected more by leaving out the least and greatest measurements? Why? * Was the mean, median, or the mode a better indicator of your reaction time? * How did your means, medians, and modes help you compare your reaction time with the reaction times of the other students in your class? |
| *3 min* | *Application*  *Mid-Chapter Review* | 1. **Individual think-Page 110 Question 4 (3 minutes)**  * The teacher will ask students to work on Question 4 individually * The teacher will check the understanding of the students by evaluating the answer for 4 a) b) c) |
| *6 min* | *Consolidation* | 1. **Ticket-out-of-the-door (5 minutes)**  * The teacher will ask students to write down one new thing that they learned today in detail * The teacher will collect the ticket at the door before the students go to the break  1. **Homework-Page 109 Example 1 & Page 110 Question 5, 7 (1 minute)** |

**7. Reflections: To be completed after you have taught the lesson.** (In this section, you will assess the effectiveness/ineffectiveness of your lesson and of your teaching.

**a) Effectiveness of your lesson***.*

*Include 2 or 3 lesson elements that were effective/ineffective. What went well, what could have gone better? How was the pacing of your lesson? Were your teaching strategies effective? Were all students engaged? Did the students accomplish your goal? Did your assessment strategies work?*

*What do you need to learn more about? What do you need to work on when planning your next lesson? Should you discuss something with your AT or your FA?*

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| **What was effective/ineffective about your lesson** | **How do you know?** | **What steps will you take to improve?** |
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**b) Effectiveness as a Teacher:**

*Include 2 or 3 comments about your effectiveness as a teacher or areas that could be improved. You could comment on your ability to manage the class, use higher order questions, your questioning technique and your ability to have the participation of all students. How effective was your oral and/or written communication? Were you able to adjust your lesson plan as required?*

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| **What was effective/ineffective about you as a teacher?** | **How do you know?** | **What steps will you take to improve?** |
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